

Abstract

A 100 days experiment was conducted to determine the effect of feeding blood meal (BM) as a replacement of fish meal (FM), as the main source of animal protein, on growth rate and economic performance of Nile tilapia in fertilized pond. Three isonitrogenous diets (35% crude protein) were formulated using either FM as the main source of animal protein (Diet 1); 50% replacement of FM with blood meal (Diet 2); or 100% replacement of FM with BM (Diet 3). Three hundred Nile tilapia fingerlings (12 ± 3 g) were randomly distributed into three groups of four replicates of 25 fingerlings per cage. The groups were randomly assigned the 3 diets which were fed at 2% of their biomass at 10 am and 4 pm every day. Percentage daily weight gain (DWG), relative growth rate (RGR), specific growth rate (SGR), survival rate and feed utilisation efficiency were measured. Fish fed diet 1 were larger (50.69 g) ($P < 0.05$) than those fed diet 2 (48.47 g) and 3 (40.37 g). Replacement of FM with 50% and 100% BM reduced the incidence cost (45.55, 37.83 and 31.88, respectively). The profit index was highest with 100% (9.42) replacement of FM, compared to 50% (7.95) and 0% (6.69). Although replacing FM with BM was associated with reduced growth, the economic return was better ($P < 0.05$). Based on the present results, it was economical to use BM as a major protein source instead of FM in formulating fish feed.